Confronting the Big Lie: A Neo-Luddite Manifesto

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The world wants to be deceived.
Sebastian Brant (1485-1521)
Ship of Fools

Any sufficiently advanced technology is indistinguishable from magic.
Arthur C. Clarke (1917-)

Note: This essay questions the uncritical preoccupation with technology which seems to overcome otherwise sensible people in the information management fields. This position, however, is not the product of a simple technophobe. I gave up my quill pen long ago, own two laptop computers, have a fax-copier-scanner at home and a desktop computer at work, and use computers, electronic mail and the Internet daily. I have neither fear nor loathing of computers and telecommunications.

No matter how many times I hear it, it still annoys me. Sometimes wreathed in tones of superiority, the pronouncement is rendered: "Information technology drives the information fields." Is this claim true? That tools rather than tasks, means rather than ends, the salesmanship of hardware vendors rather than information management professionals—that these are in control? If so, it's time for re-assessment of what we are fundamentally about. If not, it's time to speak out. Applying a critical mind to question such statements and the underlying issues should be part of every records manager's professional repertoire. As would be the case with any other tool or technology, a professional manager of any kind is supposed to take a critical and analytical stance on the application of information technology. However, if you are an information professional—**not** a computer professional or vendor—your responsibilities here are even more focused and important and require the records professional's special knowledge. Otherwise, you might wind up as little more than a machine attendant.

SONS OF LUDD

Remember the Luddites? In case you slept through that lecture in English History class, a review is in order. The term "Luddites" covers several groups of workers in the nineteenth century (ca. 1810-1840) who destroyed machinery, mostly in the east midlands of England, as a response to increasing wage dilution and impoverishment of mill workers and knitters through the increasing use of automated equipment. Under the direction of "Ned Ludd" or "King Ludd," a possibly fictitious figure, disguised workers set out from Sherwood Forest in Nottinghamshire in 1810-11 to destroy a new type of "wide frame" loom being used in factories to make a cheaper grade of hosiery goods. Not be be trifled with, the mill owners managed to have such "machine breaking" made punishable by death. So deep was the feeling of frustration and desperation on the workers' part, however, that the attacks against now-guarded factories grew in number as did the levels of violence. The fact that many Luddites were shot, given long prison sentences, or hanged is enduring testimony to their sincerity. As power-automated machinery continued to proliferate at mid-century, the Luddite movement subsided.

Luddites weren't just goofy technophobes. They were legitimately concerned that machines making inferior goods were removing their skills as craftsmen from the commercial equation and debasing their wages at the same time.[1] There is a modern meaning to the Luddites' story. The adoption of new technology in the modern workplace, particularly without consultation of workers or concern for their interests, often speaks of concern about supposed productivity triumphing over the needs of the workers.[2] Human needs and social interests then become in this situation subordinate to corporate goals; greed may triumph over the environment, citizens, and the larger welfare of the community. In their

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tactics, environmental terrorists are much like the Luddites, though what they are trying to protect is of a different nature. To what extent should records managers themselves be sensitized to the possible outcomes of a relentless, non-rational ("scan everything!") technology juggernaut, which sweeps aside as "irrelevant" issues of professional judgment (e.g., records retention, ethics)?

The Luddite movement has never fully vanished, though it has taken new forms and new causes. Neo-Luddites are becoming popular campus speakers, and several books have emerged from a growing group of neo-Luddites. Among them is that by Kirkpatrick Sale, *Rebels Against Nature: The Luddites and Their War on the Industrial Revolution* (1995) and Theodore Roszak, *The Cult of Information: A Neo-Luddite Treatise on High-Tech, Artificial Intelligence, and the True Art of Thinking* (2nd ed. 1994). The movement has steadily attracted followers. Their Second Luddite Congress was held in April, 1996.

A neo-Luddite of current infamy is Theodore Kaczynski, the alleged "Unabomber." Kaczynski's distrust of technology focused on several targets: the airlines industry, university staff engaged in technology research, genetics researchers, and computer scientists. His attacks on computer specialists are especially interesting since, until he dropped out to build sixteen bombs which killed three people and injured twenty-two others,[3] Kaczynski was one of the country's brightest young mathematicians. And it is mathematics which is the theoretical foundation for much of computer science. Without question, the modern counterpart to the automated looms of the original Luddites is the computer. Some, like Barbara Garson in her study *The Electronic Sweatshop*,[4] have begun to question the assumption that computers in the workplace are always harbingers of progress.

While no Ted Kaczynski in either fervor or method, I will confess to being one of a growing number of people in the information disciplines who question the supremacy of information technology for every information need. Like many, I grow weary of the computer marketing hype, of the techno-babble, of the claims of vendors who sell hardware rather than answers, and of the snide suggestions—techno-intimidation by info-bullies—that those who even dare raise questions about the usefulness or appropriateness of a technology to a given task are somehow throwbacks, know-nothings, twentieth-century Neanderthals who are definitely not "with it."[5]

THE BIG LIE

There are and will continue to be one or more Big Lies in every generation.[6] Simply put, the reigning Big Lie in the information fields is this: "Every information need is a computer application." Those who merely question the Big Lie are often ignored, ridiculed, left out of conversations, meetings, and decisions—or, at best, viewed as eccentric. There are many facets of this phenomenon, but let us focus on one of the underlying arguments of the information technophiles and some systems vendors, one which is pervasive enough in records management circles to become "The Micro-Lie." That is the notion that somehow in records systems "paper is bad."

There are presentations and articles by the dozens whose titles attack paper-based records systems. The use of the rhetoric in the titles is both provocative and supportive of the paper-is-bad agenda:

"The Vanishing Filing Cabinet"[7]
"Paper Woes Thwarted on Capitol Hill"[8]
"Putting Paper in Its Place Place"[9]
"How Long Will Paper Litter the Electronic Highway?"[10]
"Beating the Paper Glut"[11]
"Conquering the Paperwork Mountain"[12]
"Slaying the Paper Tiger"[13].

In these articles, paper is a loathsome enemy, something which needs to be defeated, tamed, overcome, vanquished. Why? How come? What is the right direction?

The "right" and the only permitted answer under the Big Lie is computer-based systems, of course. Anyone who is a "right thinker," not a backward thinking Luddite, knows that! At least anyone who writes for vendor-oriented trade journals, whose very purpose is to promote the product being touted by that trade association. And that's where most of the anti-paper articles are found. Others will be found in industry-specific journals in which the author crows about how his organization won out over paper with some new computer-based system they purchased. To be fair, there are articles in support of paper-based systems which appear in trade journals like *Office*.[14] The very important difference is that these other writers do not have to attack computer-based systems in order to make their point. They are perfectly aware of the many effective and appropriate computer applications. And the mix of computer and hard-copy applications as in physicians' offices where bookkeeping and appointments are handled by computer and patient files are in a hard-copy, color-coded, open-shelf system.

In order to assess the continuing viability of paper-based systems reasonably, a little common sense is in order. We should not overlook, for example, that while technology may change, human nature, values, and basic behavior have not materially changed for over a thousand years. There are, for example, traditional values which we associate with paper records/documents even from an early age. Letters from friends and family, report cards, diplomas, photographs, greeting cards, newspapers, magazines, checkbooks, stories read from books at mother's knee, textbooks, school papers, poems written in notebooks—and, of course, many more examples—are evidence of our developmental familiarity with paper media. No one really "enjoys" reading over a long period of time from a computer screen, and the early hype that everyone would be reading books from computer screens by now just hasn't happened—any more than the "paperless office."

Given the centuries-old, positively conditioned, constantly reenforced, and value laden use of paper as a medium, is there an intellectual, conceptual, or realistic basis on which to attack paper-based records systems just **because** they use paper? Why are officer workers, salespeople, accountants, managers, and others said to "hate" paper? It's time for the secret to come out: it's not, as the trade magazines claim, the **paper** they dislike; it's the **sys-**

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tems! Certainly, there are paper-based systems which fail their users for any number of reasons: poor initial design, lack of updating as volume/use increases, failure to follow procedures (e.g., use file-out subsystem to eliminate "lost" files), lack of application of retention schedules leading to "too much paper," poor layout of filing facilities, lack of use of color-coding where needed, and so forth.

Computers compute. When there is an appropriate and cost-beneficial value to bringing computing into the records system, then by all means do it. Or create a marriage of hard-copy and computerized components that may best suit the specific application. But don't computerize simply because it can be done; do what makes optimal sense for the application. Yes, a house fly can be eradicated by a thermonuclear device; it would, however, be overkill which is not cost-justifiable. When records are created initially "by hand" (e.g., printed forms, memos, correspondence) and the primary product of the process is on paper, an initial cost has already been incurred. Simply scanning, or digitizing, adds yet **another** cost layer. If a cost-beneficial purpose is served—and there are many—it may be justified.

Are paper records really on the way out? Not according to sources like the Association for Information and Image Management (AIIM), whose sponsored studies of the penetration of imaging (i.e., microfilm and electronic imaging systems) into the U.S. business environment shows that 90% to 95% of records continue to be created in paper formats and that little change is likely to occur by the year 2000.[15] More evidence on paper:

- Reports by the journal *Pulp and Paper* that each American uses over 660 pounds of paper each year,
- Almost 50% of landfills consist of paper,
- A 20% growth per year in computer printout paper,
- 1.6 trillion pieces of paper circulating annually in our offices,
- 51% increase in the number of tons of office paper shipped between 1983 and 1995,
- Reports by the American Paper Institute (New York) which show that the tons of paper each year made into file folders continues to increase year by year,
- Findings that reading text on a computer screen has been found to be 20% to 30% slower than reading print on paper,
- Only 53% of readers of "multimedia/online" publications are interested in reading in electronic formats,
- More than 10,000,000 fax machines added in U.S. homes and offices since 1987 (all of them printing onto **paper**), and
- More than 25,000,000 computers added to U.S. offices since 1983, each with access to a printer of some type.[16]

Additionally, one might expect that the current business process reengineering craze would have, among others things, given birth to a large electronic forms market. "Think again ... the 1996 world-wide e-forms business [is estimated] at about $92 million, which is a relatively tiny niche."[17] All this and paper used as the computer backup medium of choice, too? A paperless office in your—or anyone's else's—future? I think not.

THE FRENCH HAVE A NAME FOR IT

While technology has many benefits, it comes with a price tag. On one line of that invoice is our—mostly male and mostly North American—obsession with *dernier cri*—the latest thing, the last word. Our need to be among the first to have something—to be on "the cutting edge"—seems to turn off one or more major brain centers and render us incapable of seeing that while we may often **want** something, we often do not **need** it. (I was first victimized by this cerebral shutdown at the age of four when I desperately wanted to accept the radio announcer's call to be "the first kid on your block with the new Batman decoder ring.") Remember when digital watches were "the latest thing"? I still have mine, but they are hard to find now in jewelry-store cases except in sport models. The failure of a large-scale IBM information system used at the 1996 summer Olympics taught the Salt Lake City organizers of the 2002 winter Olympics a lesson: information technology used at the 2002 events must be at least two years old and thoroughly tested (*Newsweek*, August 12, 1996). Luddites!

Senior managers often contribute to this new-is-great problem. How many systems are acquired on the basis of an executive's visit to a trade show or reading hype in an airline magazine, and how many of these systems go unused or underused because there's simply no good application for them? It happens all too often. Senior managers rarely have the time to consider how each records series ought, on an individual basis, to be handled. At this level, there is a well-known disposition to see records as simply one large category. In the hey-day of microfilm, their edict was "film all of it"; today, it is likely to be "[scan or] image all of it." This approach has elsewhere been labeled The Law of the Instrument: "Give a small boy a hammer, and everything he sees needs to be nailed down." A problem which has received all too little attention is the lack of technical and technological understanding by general managers in all sectors. Their skill base focuses on abstract and conceptual matters (e.g., strategic planning), not technique and technology. This phenomenon has led to a knowledge gap between upper-level managers and technology managers, and this problem has created reduced effectiveness in planning and decision making about technology strategies and applications.[18]

SIGNS OF THE END?

The American romance with the automobile continued for many decades, but at about the time Japanese cars began to make U.S. autos seem inferior, this non-rational attachment began to subside; I believe a similar path is eminent for computing. You may be able to identify others, but I have identified two specific phenomena that mark the beginning of the end of our uncritical "gee-whiz" fascination with computing as the persistent choice to address **all** information needs.

First, the year 2000 problem in computing will create monumental difficulties, cost millions of dollars

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to fix, and make many computer users very angry.[19] Virtually all computers rely on a two-digit representation of the year (e.g., "1996" is treated as "96"). When the computer's timing, or clock, subsystem attempts to read the year 2000, it will see "00" as less than the "99" of 1999. Therefore, attempts to do many comparisons and calculations, such as a person's current age based on his/her computer-stored birth date, will yield gibberish. This is not one of those software glitches that a company can sweep under the rug or stall for time to fix. Nor is it a geographically isolated problem. This little problem is likely to cost $300-$600 **billion** to fix on a world-wide basis. One estimate puts at less than fifty percent the number of U.S. companies which will have the problem fixed by December 31, 1999.[20] This is a fiasco of Biblical proportions! It is worth mentioning here because, I believe, it is one of the growing number of signs of the imperfection of computer based systems. Frankly, it would be too much to ask that system designers be forgiven because they had no idea there would ever be a year 2000!

A second sign of the cracking facade of computer invulnerability is the Intel chip fiasco in the fall of 1994. Intel was—and is—a world leader in the design and manufacture of computer chips, including the central processing unit (CPU) used on most personal computers. Intel researchers and a very small number of math-heavy users discovered a flaw in the Pentium's processor's floating decimal unit (FDU). A rounding error in division would likely occur every 9 billion times—in other words very seldom. After a $475 million write-off to cover replacements and pulling existing stock out of inventory and off assembly lines, Intel began a recovery of public esteem.[21] Along with additional delays in the release of Microsoft's new Windows 95 operation system and reports of flaws in other products by increasingly sophisticated and critical technology journal writers, the Intel debacle has symbolized a fallibility on the part of those in the computer industry only rarely acknowledged before by themselves or the media. However, the reporting of problems like these and others in the computer and popular press, as well as furious discussion on the Internet, have fractured forever in the public's mind the once-unassailable veneer of the invincibility of computers and their promoters. For this, we neo-Luddites are grateful because now we are not alone.

MORE SLINGS AND ARROWS

Another blow being reported widely is the costly effort of the Internal Revenue Service to enable citizens to file returns from their personal computers.[22] The computer system which the IRS had engaged the Commerce Department to create for this purpose was seriously flawed from the beginning, was over budget, was never used, and today is the target of investigative reporters. This is yet another techno-debacle which raises questions about systems design expertise: "if these high-paid government types cannot even create such a system, what about those systems guys where I work?"

There is also a continuing and irritating disconnect between those who have to use systems and those who engineer them. A continuing lack of consideration for human factors (e.g., ergonomics, operator-computer interface, user skill development) reenforces the neo-Luddite belief that systems designers are not really interested in how human beings function and how they naturally process information but instead are interested in creating elegant machinery to which workers are forced to adapt—rather than the other way around.[23] It would reduce some of the criticism by neo-Luddites if system designers could understand, accept, and utilize the fact that technology is subordinate to human psychology in systems design.[24]

Not unlike the snake oil salesmen of old, the computer industry flacks have arrogantly and shamelessly touted almost every innovation in computing as a solution for just about any information problem one might name. This unethical strategy has put increasing pressure on those who have to deal with reality in organizations to find a way to answer sudden interests in or demands for some "hot" new technology.[25]

There are growing concerns among neo-Luddites and some systems folks alike about the ethical foundations of systems developers as they develop systems for corporate entities who may not always place highly the best interests of individuals. This can happen in medicine, credit agencies, reengineering initiatives, and so on.[26] While there may be some technologists who see no relationship between ethical conduct and information technology, this will continue to be an area of concern of the humanistically inclined and perhaps neo-Luddites as well. Among the issues are privacy, accuracy, misuse, and abuses by providers of systems and services.[27]

There always have been differences in outlook, values, and priorities between humanists and technologists. There are those, however, who see an emergent humanist revolution in the business community. At the heart of this revolution is a change from emphasis on the physical to the intellectual and from the mechanical to the human. A more mature understanding by managers of the advantages **and** limitations of information technology may be behind this shift, which in many ways is about recognizing computers as tools which are secondary to our abilities to reason, create, judge, imagine, and build relationships.[28]

An interesting component of the Big Lie is inflated productivity claims. There are many continuing questions about the contributions to office productivity of computer-based systems. Despite many early and grossly inaccurate promises to the contrary, productivity has **not** been adequately shown to have risen among office workers as the result of the use of computers, nor is it likely to in such areas as creative thinking and decision making.[29] Very little progress has, in fact, been made by systems professionals in even finding an acceptable unit of measure or proper statistical tools. There is even evidence that the wrong factors are being

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measured to begin with.[30] This flaw has not slowed an outpouring of lavish claims, however.[31] And there are studies which simply show that in many sectors computers are over promised and under productive, with the increasingly lower costs of information technology often masking its increasingly high costs of making it useful.[32] Even a recent cartoon in my local newspaper catches the idea. In the "Sally Forth" strip, Ted is at work at the home PC:

Ted: I'm installing a program that figures out how much time the computer saves me each week.

Sally: Computers don't save time, Ted.

Ted: Luddite!

Sally: It's like some forbidden topic. Everyone's afraid to admit that we spend more time learning how to use them than they save us.[33]

There is an increasing realization among computer users, office managers and MIS staff that while implementing software upgrades line the pockets of the software creator, they are not always in the organization's best interest. The expense and difficulties associated with implementing upgrades may often outweigh the benefits of the new, and allegedly improved, release. Among the problems that may be encountered are new releases which are incompatible with existing data sets and a need for time-consuming conversions.[34]

TECHNO-BABBLE

The defining characteristic of the ancient Tower of Babel in Babylon was that those who were building it could not understand each other's language. For this reason, the project could not be completed. There are those who believe that buzzwords are being used to cloud judgment and make sales of "leading-edge" technology, which, of course, no "with it" person wants to be without![35] The preoccupation of technophiles with technology buzzwords is becoming well known. Are these terms used, as some suspect, to imply a superiority on the part of their users (e.g., information systems staff and vendors alike)?[36] Admittedly, there are several dozen computing and systems terms which any information professional should know (e.g., graphical user interface, database management system, local area network, central processing unit, modem, etc.), but most buyers and users are fundamentally less interested in a system's parts and names or even features than they are in its benefits.[37] Thus, vendors, consultants, and internal employees who have to resort to jargon, despite a possible initial advantage, will eventually come to rue their inability or unwillingness to communicate in everyday language.

In this vein, one must suspect that the abject failure of gobbledygook filled users manuals supplied with software and the enormous success of alternative manuals like the "For Dummies" series, is an indicator of how out of touch with users most systems developers are.[38] Trevor Bentley has suggested that manufacturers and vendors do not seem to understand that user dissatisfaction and under-utilization of systems is directly related to incomprehensible technical manuals and that a form of techno-fear is perpetuated by the high incidence of "cautions" and "warnings" in the manuals and deliberately intimidating error messages (e.g., "Fatal Error!") on the screen.[39]

TECHNO-STRESS

The dominance of techno-babble in conversations, proposals, books, and presentations can, along with a lack of experience with systems, lead to techno-stress. While we know that injection of new computer-based systems into the workplace can cause notable employee problems (e.g., absenteeism, turnover, steep learning times), we are only just learning that techno-stress is a reality. The speed in pervasive growth and in the number and interrelationship of information technologies (e.g., computing, telecommunication, storage devices) has outpaced the ability of most individuals to keep pace with a frenetic pace of life which, ironically, is being brought about, largely, by these technologies.[40] Too many systems professionals seem to have been focusing on the mechanical, rather than the human, factors and are only now trying to address these issues. Even common sense will tell us that the less an employee is included in the planning and implementation phase of system introduction, the more stress the employee feels and the more that person's work attitudes and activity are negatively affected.[41]

It is not system users alone who are affected. There is a dramatically increased pressure on systems and MIS staff to met demands caused by unrealistic promises (e.g., production, delivery, and installation schedules) made either by vendors or insider systems managers. System and network specialists may be under stress themselves by being on call at odd hours; boundaries between home and work are being demolished; enormous workloads are typical. Such pressures cause serious work-related problems, which may include—however unfairly—a growing cynicism about the technology itself.[42]

It would not appear that the emergence of the Chief Information Officer (CIO) as a technocrat in larger organizations has managed to address all these issues effectively. As suggested elsewhere, the CIO has many problems to address; these represent but a handful. One of them is an inability to integrate the value of some information disciplines (e.g., records management, archives management, corporate libraries) into their vision of corporate "information services." This failure can be explained by some CIOs' inability to see beyond hardware and software, that information management and services are about getting the right information to the right person in the right amount in the right order in the right medium at the right time and at the lowest reasonable cost.

CONCLUSION

Look closely and you will see that this has not been an attempt to put technology down. That would be as wrongheaded as the Big Lie itself. Technology has no agency or power of its own. As one technologist, "Red" Smith, suggested, "by itself, technology is an idiot." It is how technology developers and promoters distort technology's place in the information management terrain that is under fire here. Without question, records managers should learn as much as they can about the nature, roles, and applications of a broad range of information technologies. Just as certainly, they should insist that decisions about

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Perspectives ...

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technology be rational, appropriate, cost-effective and that it transcend techno-hype, techno-greed, techno-babble, techno-fear, techno-fads, and techno-bullying. Now more than ever, if technology is the answer, what is the question? It may be that you will occasionally find yourself in the awkward position of the little boy who pointed out that the emperor lacked clothing. If so, courage!

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42. Natalie Engler, "Stressed," *Computerworld*, 39, xvi (April 15, 1996), 86-87. The damage that "hype" (hyperbole) can do shouldn't be ignored; see Joel Dreyfuss, "Technology and Hyperbole," *Informationweek*, April 1, 1996, p. 129.

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